In the Specification

Page 9, paragraph 2 (lines 4-15)

Referring now to Figure 1, there is shown a schematic diagram of an exemplary disk storage system 10. The core component of storage system 10 is a storage media or optical storage device12. Storage media 12 would preferably be an optical disk, however is not necessarily limited to only that type of device. Disk storage system 10, necessarily has a read/write system 14 incorporated therein for writing data to the optical media 12, and reading data therefrom. Storage system 10 further includes drive electronics 16 for ~~operating~~ coordinating the functions of the drive such as controlling a spindle motor 40, and a read/write head 42. Also associated is a drive controller 20 which includes a memory or RAM 24. Interacting with the output from read/write head 14 is a read/write channel 26 which necessarily includes an internal decoder (now shown). Read/write channel 26 is capable of producing either decoded or nondecoded data and providing this data to controller 20. Controller 20 also communicates with a host system (not shown) to respond to its data storage and retrieval needs.

Page 9, paragraph 4 (lines 21-27) through page 10, paragraph 1 (lines 1-2)

Read/write head ~~14~~ or system 42 includes various components which are necessary for its operation. Specifically, a radial actuator 30 is included for accommodating radial motion for read/write system ~~14~~ 42. Also, a vertical actuator 32 is included to move appropriate components closer to the surface of optical media 12 when necessary. Vertical actuator 32 may also be referred to as a focus motor as it typically moves a focusing lens 34 into its optimum position. Lastly, read/write system ~~14~~ 42 includes a laser and detector 36 for appropriately producing optical signals for use in either writing or reading to the optical media. Additionally, this laser and detector system cooperates with the light signals produced to detect data which has already been written to optical media 12.

Page 11, paragraph 4 (lines 20-29) through page 12, paragraph 1 (lines 1-5)

As well known by those skilled in the art, the actual data itself is typically stored in a number of data sectors, with each data sector including a plurality of data frames. Referring to Figure 5, there is graphically illustrated one configuration of an example data sector 70. In this particular layout, the sector includes sixty different data frames -- data frame #0 through date frame #59. Data frames #0-58 each include 40 bytes, while data frame #59 includes 32 bytes. In this particular layout, data frame #0 includes twenty-one 3T preamble bytes, followed by one 2T preamble byte. These 3T and 2T bytes are utilized for synchronization and initialization functions. Following these bytes, data frame #0 includes eighteen data bytes. Data frame #1 through data frame #58 are all identically formatted, and include one reference byte followed by thirty-nine data bytes. Lastly, data frame #59 includes a first reference byte, thirty data bytes, ending with a single reference byte. In this particular embodiment, the transfer of the various bytes to the controller is shown in Figure 6. As can be seen, a matrix is created in which a column of reference bytes exist as the starting point. Based on this data transfer structure, the raw data bytes can be interleaved over various code words to promote further error correction. This provides an easy and convenient structure for further error correction operations.

Page 12, paragraph 3 (lines 13-28)

As discussed above, the initial portions of a data sector typically include various initialization and synchronization bytes. These synchronization bytes allow the readout system to calibrate and self adjust in order to operate efficiently. One aspect of this synchronization is appropriate gain control of the read channel. Specifically, appropriate gain control is necessary for the read signal digitizer. As mentioned above, data storage system 10 includes a read/write channel 26 for performing data handling operations. Read/write channel 26 includes a read signal digitizer for appropriate conversion of read out signals. As can be seen in Figure 7, an analog readout signal 122 is received at an input to an adjustable amplifier 124. Amplifier 124 provides the necessary gain for read signal digitizer 120 and is precisely the component which must be

controlled to provide optimal operation. The output of amplifier 124 is provided to a summing circuit 126, which cooperates to provide the necessary offset control. The output of summing circuit 126 is provided to an analog to digital converter 128 which provides the actual data conversion for read signal digitizer 120. Obviously, analog to digital converter 128 also receives a read clock signal 130 to appropriately control its timing. The output from analog to digital converter 128 is then provided to read channel logic 132 for appropriate analysis and control. Read channel logic 132 also receives the read clock signal 130 at a timing input.